



One Goal. One Priority. Your Healthcare.

**CLINICAL
PRACTICE
GUIDELINE
REVIEW
WORKSHEET**

Procedure: **Chronic Obstructive Pulmonary Disease**

Page#: _____

Guideline Review Cycle: **2015**

Reviewed By: _____

Review Date: **January 2015**

Committee Approval Date: _____

PURPOSE:

To guide AzPC network providers in the diagnosis and treatment of Chronic Obstructive Pulmonary Disease (COPD). The goal is to prevent hospitalisation and re-admission, to clinically improve symptoms, and to achieve best practice in managing COPD patients. This CPG is written based on American Thoracic Society COPD guidelines, last updated 2004 and Global Initiative for Chronic Obstructive Lung Disease 2014. This CPG is not intended to replace a physician's clinical medical judgment which should be based on current medical knowledge and practices.

FINDINGS:

COPD is characterised by airflow limitation which is preventable and treatable but not fully reversible, and diagnosis is confirmed with spirometry. COPD is usually progressive and associated with enhanced chronic inflammatory response in the airways and lungs to noxious particles or gases. It is a major cause of morbidity and mortality throughout the world. Treatment of COPD is aimed at immediately relieving and reducing the impact of symptoms, as well as reducing the future risk of adverse events such as exacerbations. Worldwide, the most common risk factor is tobacco exposure (active or passive). Other major risk factors are outdoor, occupational, and indoor air pollution. The genetic risk factor is a severe hereditary deficiency of alpha-1 antitrypsin. In addition, any factor that affects lung growth during gestation and childhood has potential to increase an individual's risk of developing COPD. COPD is the 4th leading cause of death in the USA and Europe.

RECOMMENDATIONS:

Arizona Priority Care recommends the adoption of the American Thoracic Society (ATS) and European Respiratory Society (ERS) Standards for the Diagnosis and Management of Patients with COPD 2004 and Global Initiative for Chronic Obstructive Lung Disease Updated 2014

- To control and monitor symptoms and maximum medical intervention.
- High-Risk Team, Hospitalist Team, Primary Care Physician, Case Management/Social Workers and other ancillary services to work together with effective COPD guidelines.

ATTACHMENTS:

- The American Thoracic Society (ATS) and European Respiratory Society (ERS) Standards for the Diagnosis and Management of Patients with COPD 2004
 - Section 2.4. Table 1 – Spirometric general classification.
 - Section 7.3.3 Figure 1 – Algorithm for pharmacological treatment of COPD
 - Section 14.7.1.1. Table 3 – Indications for hospitalization of patients with a COPD exacerbation
 - American Lung Association – My COPD Action Plan

GOAL

To provide guidelines for:

- Early and ongoing control of COPD symptoms through lifestyle management and pharmacotherapy to reduce complications, improve outcomes and life expectancy.
- Achieving optimal pharmacotherapy with minimal or no side effects
- Minimizing the need for acute services (ER encounters, urgent care, and hospitalisations)

ASSESSMENT AND DIAGNOSIS:

- **Symptoms** of COPD include dyspnea, chronic cough, chronic sputum production. Also evaluate for exposure to known risk factors and family history of COPD.
- **Spirometry** may be used to confirm/support a clinical diagnosis of COPD; the presence of a post-bronchodilator FEV1/FVC < 0.70 confirms presence of persistent airflow limitation and thus of COPD. See attached ATS Table 1 of Section 2.4. - Spirometric general classification. Bronchodilator reversibility should be performed at least once to exclude asthma and to establish best lung function. Also, in COPD, there is increase in residual volume (RV) and total lung capacity (TLC). There is increased RV/TLC due to air trapping seen in emphysema.
- **Assessment of COPD severity** is performed using spirometry, dyspnea, and body mass index (BMI)
- **Chronic bronchitis:** defined clinically as chronic productive cough for 3 months in each of 2 consecutive years in a patient in whom other causes of productive chronic cough have been excluded
- **Emphysema:** is defined pathologically as the presence of permanent enlargement of the airspaces distal to the terminal bronchioles, accompanied by destruction of their walls and without obvious fibrosis.
- **Assess sleep quality and for sleep apnea syndrome.** Avoid hypnotics.
- **Differential Diagnosis:** A major differential diagnosis is Asthma. Also, Congestive Heart Failure, Bronchiectasis, Tuberculosis, Obliterative Bronchiolitis, Diffuse Panbronchiolitis. All patients with a family history of respiratory illnesses, patients presenting with airflow limitation at a relatively early age (4th or 5th decade) should be tested for alpha1-antitrypsin deficiency.
- **Assess risk of exacerbations.** Exacerbation of COPD is defined as an acute event characterised by a worsening of the patient's respiratory symptoms that is beyond normal day-to-day variations and leads to change in medications. The best predictor of having frequent exacerbations (2 or more per year) is a history of previous treated events. Risk of exacerbations also increases as airflow limitation worsens.
Hospitalisation for a COPD exacerbation is associated with poor prognosis. See attached Table 3 from American Thoracic Society for indications for hospitalisation with a COPD exacerbation.
- Assess for comorbidities and treat appropriately.
- **Other Diagnostics:** Spirometry, EKG, CXR, High resolution CT, ECHO, ABGs
- Perform good medical history and physical exam.

RECOMMENDED THERAPIES:

- Routine Outpatient Management
- **Smoking cessation:** counseling by healthcare providers, Nicotine Replacement Therapy, and pharmacotherapy such as varenicline, bupropion, or nortryptiline.
- Physical exercise

- Prevention of smoking, occupational exposure, indoor and outdoor air pollution
- Annual influenza vaccine
- Pneumococcal vaccine
- Oxygen for resting or ambulatory hypoxemia ($\leq 88\%$)
- **Pulmonary Rehabilitation:** multidisciplinary program of care for patients with chronic respiratory impairment that is individually tailored and designed to optimize physical and social performance and autonomy. This therapy results in significant and meaningful clinical improvements in multiple outcome areas such as dyspnea, exercise ability, health status, and healthcare utilization.
- **Nutrition:** evaluate for weight loss, depletion of fat-free mass, being underweight (BMI<21), muscle wasting; these are associated with increased morbidity and mortality and may need nutritional supplementation and dietary counseling
- **Case Management**
- **Pulmonologist** if COPD onset prior to age 40, frequent exacerbations despite optimal treatment, severe or rapidly progressive symptoms disproportionate to the severity of airflow obstruction, need for long term oxygen therapy, and onset of comorbid illnesses.
- **Surgery:** bullectomy, lung volume reduction surgery, lung transplantation
- **Palliative Care, End-of-life Care, and Hospice Care:** important components of the management of patients with advanced COPD

Pharmacologic therapy in COPD: used to reduce symptoms, reduce frequency and severity of exacerbations, and improve health status and exercise tolerance. See attachment, American Thoracic Society 7.3.3. Figure 1-Algorithm for pharmacological treatment of COPD.

- **Bronchodilators:** Most important effect is smooth muscle relaxation and improved lung emptying during tidal breathing improving symptoms and exercise tolerance. They do not alter decline in lung function.
 - **Short acting:** anticholinergic ipratropium and beta2 agonist (albuterol) as needed
 - **Long acting:** beta2 agonist: formoterol, salmeterol and anticholinergics: tiotropium.
- **Inhaled Corticosteroids:** Combination therapy with inhaled corticosteroids and long acting beta2 agonist reduces COPD exacerbations and improves self-reported functional status.
- **Oral Corticosteroids:** For acute exacerbations, sometimes long term corticosteroids warranted, but consult with pulmonologist
- **Methylxanthines:** theophylline; 4th line agent when anticholinergic, beta2 agonist, and inhaled corticosteroids do not provide adequate symptom control. Narrow therapeutic margin and complex pharmacokinetics make this medication more difficult to use.
- **Mucolytic Agents:** Patients with viscous sputum may benefit from mucolytics but overall benefits are small.
- **Antibiotics:** for acute exacerbations and to treat acute bronchitis

PATIENT EDUCATION

General Counseling

- Explanation of COPD and the reason for symptoms
- Education Handouts as indicated including the **COPD ACTION PLAN**-see attachment
- Expected symptoms
- Symptoms of worsening COPD and what to do if they occur
- Self-monitoring of functional status and when to call physician

- Explanation of treatment/plan of care
- Clarification of patient's responsibilities
- Importance of cessation of tobacco use
- Role of family members or other caregivers in the treatment/plan of care
- Importance of obtaining vaccinations against influenza and pneumococcal disease
- Importance of compliance with treatment/plan of care
- Medication counseling: likely side effects, importance of compliance
- Dietary recommendations
- Activity recommendations

Prognosis

- Life expectancy
- Advance directives

SPECIALIST INVOLVEMENT

- Consider Pulmonary referral for complete pulmonary evaluation and continued follow up
- Consider Palliative Care for advanced COPD, elderly with multiple comorbidities with no meaningful improvements in survival with aggressive therapy
- Complex Care Physician for additional support in managing COPD patients

Section 2.4. Table 1 – Spirometric general classification

2.4. Spirometric classification

Table 1. – Spirometric general classification

Severity	Postbronchodilator FEV1/FVC	FEV1 % predicted
At risk Patients who: smoke or have exposure to pollutants have cough, sputum or dyspnea have family history of respiratory disease	>0.7	≥80
Mild COPD	≤0.7	≥80
Moderate COPD	≤0.7	50–80
Severe COPD	≤0.7	30–50
Very severe COPD	≤0.7	<30

FEV1: forced expiratory volume in one second; FVC: forced vital capacity.

Section 7.3.3 Figure 1 – Algorithm for pharmacological treatment of COPD

7.3.3. Clinical use of bronchodilator drugs

See figure 1.

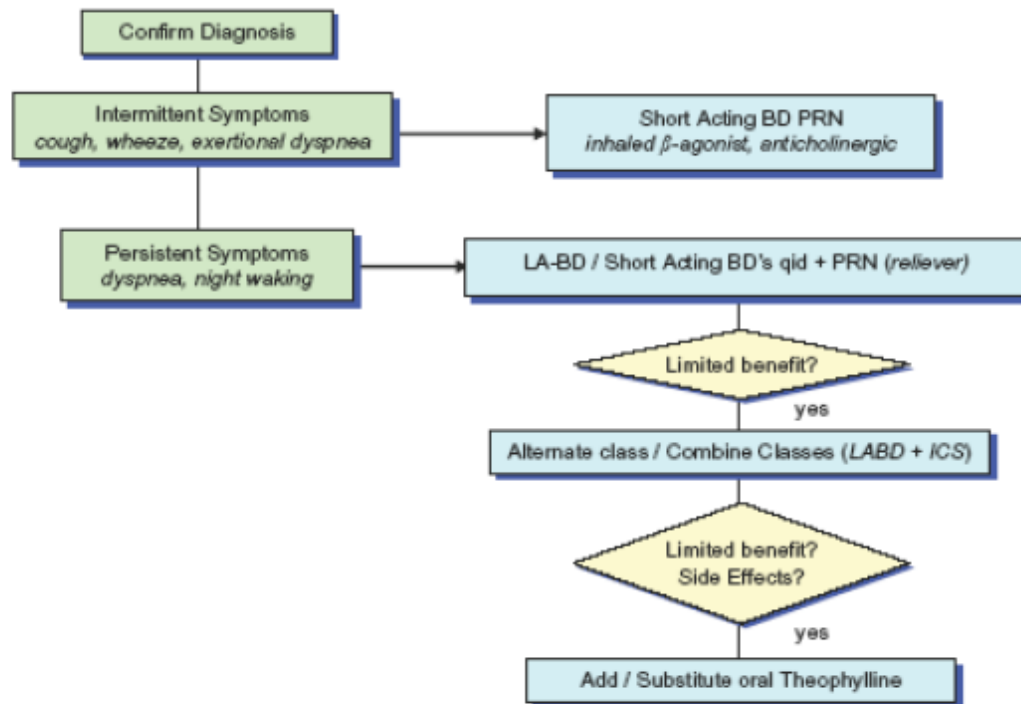


Fig. 1. - Algorithm for pharmacological treatment of chronic obstructive pulmonary disease (COPD). SA-BD: short-acting bronchodilator; LA-BD: long-acting bronchodilator; ICS: inhaled corticosteroid. Assess effectiveness by treatment response criteria. If forced expiratory volume <50% predicted and exacerbations of COPD requiring a course of oral corticosteroid or antibiotic occurred at least once within the last year, consider adding regular ICS. Always ensure the patient can use an inhaled device effectively and understands its purpose. If an ICS and a long-acting β-agonist are used, prescribe a combination inhaler.

Section 14.7.1.1. Table 3 – Indications for hospitalization of patients with a COPD exacerbation

Table 3. – Indications for hospitalisation of patients with a COPD exacerbation

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- The presence of high-risk comorbid conditions, including pneumonia, cardiac arrhythmia, congestive heart failure, diabetes mellitus, renal or liver failure
 - Inadequate response of symptoms to outpatient management
 - Marked increase in dyspnoea
 - Inability to eat or sleep due to symptoms
 - Worsening hypoxaemia
 - Worsening hypercapnia
 - Changes in mental status
 - Inability of the patient to care for her/himself (lack of home support)
 - Uncertain diagnosis.
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MY COPD ACTION PLAN

It is recommended that patients and physicians /healthcare providers complete this action plan together. This plan should be discussed at each physician visit and updated as needed.



The green, yellow and red zones show symptoms of COPD. The list of symptoms is not comprehensive, and you may experience other symptoms. In the "Actions" column, your healthcare provider will recommend actions for you to take based on your symptoms by checking the appropriate boxes. Your healthcare provider may write down other actions in addition to those listed here.

Green Zone: I am doing well today	Actions
<ul style="list-style-type: none"> • Usual activity and exercise level • Usual amounts of cough and phlegm/mucus • Sleep well at night • Appetite is good 	<ul style="list-style-type: none"> <input type="checkbox"/> Take daily medicines <input type="checkbox"/> Use oxygen as prescribed <input type="checkbox"/> Continue regular exercise/diet plan <input type="checkbox"/> At all times avoid cigarette smoke, inhaled irritants* <input type="checkbox"/> _____

Yellow Zone: I am having a bad day or a COPD flare	Actions
<ul style="list-style-type: none"> • More breathless than usual • I have less energy for my daily activities • Increased or thicker phlegm/mucus • Using quick relief inhaler/nebulizer more often • Swelling of ankles more than usual • More coughing than usual • I feel like I have a "chest cold" • Poor sleep and my symptoms woke me up • My appetite is not good • My medicine is not helping 	<ul style="list-style-type: none"> <input type="checkbox"/> Continue daily medication <input type="checkbox"/> Use quick relief inhaler every _____ hours <input type="checkbox"/> Start an oral corticosteroid (specify name, dose, and duration) _____ <input type="checkbox"/> Start an antibiotic (specify name, dose, and duration) _____ <input type="checkbox"/> Use oxygen as prescribed <input type="checkbox"/> Get plenty of rest <input type="checkbox"/> Use pursed lip breathing <input type="checkbox"/> At all times avoid cigarette smoke, inhaled irritants* <input type="checkbox"/> Call provider immediately if symptoms don't improve* <input type="checkbox"/> _____

Red Zone: I need urgent medical care	Actions
<ul style="list-style-type: none"> • Severe shortness of breath even at rest • Not able to do any activity because of breathing • Not able to sleep because of breathing • Fever or shaking chills • Feeling confused or very drowsy • Chest pains • Coughing up blood 	<ul style="list-style-type: none"> <input type="checkbox"/> Call 911 or seek medical care immediately* <input type="checkbox"/> While getting help, immediately do the following: <input type="checkbox"/> _____

*The American Lung Association recommends that the providers select this action for all patients.

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For more information, visit www.Lung.org or call 1-800-LUNG-USA (1-800-586-4872)

MY COPD MANAGEMENT PLAN

It is recommended that patients and physicians/healthcare providers complete this management plan together. This plan should be discussed at each physician visit and updated as needed.



General Information

Name:	
Emergency Contact:	Phone Number:
Physician/Health Care Provider Name:	Phone Number:
Date:	

Lung Function Measurements

Weight: _____ lbs	FEV ₁ : _____ L _____ % predicted	Oxygen Saturation: _____ %
Date:	Date:	Date:

General Lung Care

Flu Vaccine	Date:	Next Flu Vaccine Due:
Pneumonia vaccine	Date:	Next Pneumonia Vaccine Due:
Smoking status	<input type="checkbox"/> Never <input type="checkbox"/> Past <input type="checkbox"/> Current	Quit Smoking Plan
Exercise plan <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Walking <input type="checkbox"/> Other _____ _____ min/day _____ days/week	Pulmonary Rehabilitation <input type="checkbox"/> Yes <input type="checkbox"/> No
Diet plan <input type="checkbox"/> Yes <input type="checkbox"/> No	Goal Weight: _____	

Medications for COPD

Type or Descriptions of Medicines	Name of Medicine	How Much to Take	When to Take

My Quit Smoking Plan

<input type="checkbox"/> Advise: Firmly recommend quitting smoking	<input type="checkbox"/> Discuss use of medications, if appropriate:	
<input type="checkbox"/> Assess: Readiness to quit		
<input type="checkbox"/> Encourage: To pick a quit date	<input type="checkbox"/> Freedom From Smoking [®] www.ffsonline.org	<input type="checkbox"/> Lung HelpLine 1-800-LUNG USA
<input type="checkbox"/> Assist: With a specific cessation plan that can include materials, resources, referrals and aids		

Oxygen

Resting:	Increased Activity:	Sleeping:
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Advanced Care and Planning Options

<input type="checkbox"/> Lung Transplant	<input type="checkbox"/> Lung Reduction	<input type="checkbox"/> Transtracheal Oxygen	<input type="checkbox"/> Night-time Ventilator	<input type="checkbox"/> Advanced Directives
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Other Health Conditions

<input type="checkbox"/> Anemia	<input type="checkbox"/> Anxiety/Panic	<input type="checkbox"/> Arthritis	<input type="checkbox"/> Blood Clots
<input type="checkbox"/> Cancer	<input type="checkbox"/> Depression	<input type="checkbox"/> Diabetes	<input type="checkbox"/> GERD/Acid Reflux
<input type="checkbox"/> Heart Disease	<input type="checkbox"/> High Blood Pressure	<input type="checkbox"/> Insomnia	<input type="checkbox"/> Kidney/Prostate
<input type="checkbox"/> Osteoporosis	<input type="checkbox"/> Other:		

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